

TECHNICAL REVIEW DOCUMENT
For
RENEWAL OF OPERATING PERMIT 95OPEA041

American Gypsum Company – Eagle Plant
Eagle County
Source ID 0370029

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I. Purpose

This document establishes the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed Operating Permit for the American Gypsum Company – Eagle Plant. The previous Operating Permit for this facility was renewed on May 1, 2003, was last revised on March 10, 2004 and expired on May 1, 2008. However, since a timely and complete renewal application was submitted, under Colorado Regulation No. 3, Part C, Section IV.C all of the terms and conditions of the existing permit shall not expire until the renewal operating permit is issued and any previously extended permit shield continues in full force and operation.

This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted on March 16, 2007, previous inspection reports and various email correspondence with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

The American Gypsum Company – Eagle facility mines and processes gypsum rock and uses it to produce wallboard at a rate of 750 million square feet per year. Gypsum is mined at the quarry and if necessary, screened to separate oversized material. The gypsum is then transported a short distance to the plant via belly dump trucks. Once at the wallboard plant, the gypsum is loaded onto belly dump trucks and moved to the rock

receiving station, where it is conveyed to the rock storage building. Rock is stored and then conveyed to the crushing station. Crushed ore is conveyed to one of three storage bins then on to a calcining system, consisting of three impact mills (and associated furnaces). A small portion of the ore is sent directly to the landplaster (accelerator) mill, without calcining. Material from the landplaster mill is stored and eventually combined with other materials, including sugar, starch, vermiculite and boric acid, in the dry additives conveying process.

Calcined ore (stucco) is conveyed via screw to the stucco elevator and then on to the two stucco storage bins. The stucco is then combined with other materials (see above) in the dry additives conveying system. Wet additives are combined to form a slurry, which is placed between two layers of paper, then scored and buffed. The wallboard is conveyed and hardened, then sent through a series of three dryer zones. The finished product is trimmed and stacked, with the scrap returned to the beginning of the process. Off-specification wallboard is recycled at a maximum rate of 30 tons per hour. The wallboard product is loaded on both truck and railcar for transportation off site.

Power for the facility is provided by two natural gas fired cogeneration turbines, operating a maximum of 8,760 hours per year per turbine. Backup diesel generators provide power in the event of turbine malfunction. A diesel generator provides power to equipment at the mine.

American Gypsum's gypsum mine was previously considered a separate source from the wallboard manufacturing plant. After reconsideration, the Division has determined that these two facilities are operating as a single source and notified the source in a letter dated February 2, 2011. All emission points at the mine (AIRS ID 037/0019) will be incorporated into the AIRS ID of the wallboard plant (037/0029). As these units are transferred, they will be assigned new individual point numbers.

The facility is located on Highway 6 near the town of Gypsum, CO, Eagle County. The area in which the plant operates is designated as attainment for all criteria pollutants. There are no affected states within 50 miles of the plant. The following Federal Class I designated areas are within 100 kilometers of the plant: Eagles Nest, Flat Tops, Maroon Bells - Snowmass, and West Elk National Wilderness Areas.

Based on the information provided by the applicant, this source is categorized as a minor stationary source for PSD as of the issue date of this permit. Any future modification which is major by itself (Potential to Emit of > 250 TPY) for any pollutant listed in Regulation No. 3, Part D, Section II.A.42 for which the area is in attainment or attainment/maintenance may result in the application of the PSD review requirements

Actual emissions (in tons/yr) at the facility according to revised APENs submitted 4/26/2011 are as follows. Note that actual emissions were not reported for two points (010 & 025) at the facility. Emissions from 010 were taken from the last reported actual value (2006) and emissions from point 025 were calculated from the reported throughput.

Pollutant	Plant	Mine	Total
PM	10.8	64.5	75.3
PM ₁₀	7.0	28.1	35.1
NO _x	76.0	5.5	81.5
CO	42.3		42.3

Applicable Requirements

NESHAP Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines

40 CFR 63 Subpart ZZZZ includes requirements for reciprocating internal combustion engines (RICE). Subpart ZZZZ was amended on August 20, 2010 and now includes requirements for RICE at area sources of HAPs. RICE located at the facility include two (2) diesel fired compression ignition (CI) emergency generators used as back up for the gas turbines, and one (1) diesel fired CI non-emergency generator located at the mine which is used for heating equipment and periodic maintenance.

The CI engines commenced construction prior to June 12, 2006 and are therefore defined as existing engines under Subpart ZZZZ. Both the emergency engines and non-emergency engines are subject to regular maintenance and inspection requirements. Since both engines are not subject to any emission limitations, monitoring requirements, notification and reporting requirements the requirements in §§ 63.7, 63.8, 63.9 and 63.10 do not apply. In addition, since these emission units are existing units, the requirement in § 63.5 (preconstruction review and notification requirements) do not apply. Finally, Table 8 of Subpart ZZZZ indicates that operation and maintenance requirements in 63.6(e) do not apply. Therefore, the permit will only include the prohibition and circumvention NESHAP general provisions requirements in § 63.4.

Greenhouse Gases

Greenhouse gas emissions from this facility are less than 100,000 TPY CO₂e. Future modifications greater than 100,000 TPY CO₂e may be subject to regulation.

Waste Reclaim System

The original issuance of the permit identified the waste reclaim system as being subject to the requirements of Subpart OOO. In the technical review document for the original Title V permit (issued 6/17/97), the Division indicated the following with respect to NSPS Subpart OOO and the waste reclaim system:

NSPS requirements for this process were only triggered when additional crushing capability was necessary to complete the recycling loop. Therefore, stack testing requirements (initial and within 18 months of permit issuance) will only be required for the baghouse associated with those operations.

The first renewal process raised questions regarding the applicability of Subpart OOO based on the specific processes involved. The source then indicated that the second crusher would not be needed and as a result the Title V permit was revised to reflect the changes to the waste reclaim system. The Division removed the NSPS Subpart OOO requirements from the permit as the Division believed that the NSPS requirements were only triggered by the second crusher. In addition, the Division revised the permit shield for non-applicable requirements (Section III.1 of the permit) to indicate that the waste reclaim system was not subject to the NSPS Subpart OOO requirements.

The Waste Reclaim process as operated currently involves conveyors and crushers, which are considered “affected facilities” according to Subpart OOO. EPA applicability determinations for similar recycled wallboard activities at gypsum processing facilities have established that these activities are subject to Subpart OOO. After reviewing external guidance and the processes involved, the Division has determined that the Waste Reclaim System is subject to the provisions of Subpart OOO. Since this emission unit was previously subject to the requirements and has submitted an initial performance test, the requirements for such a test were not included in the permit.

Gypsum Mine

Since the wallboard manufacturing plant and gypsum mine will now be considered a single source, the emission units from the mine site has been included in the permit. The applicable requirements for the mine activity are as follows:

Unit M003 – Mine Fugitives (Construction Permit 84EA192-3)

This point is for gypsum mineral mining operation fugitive emission and is subject to the requirements of Colorado Regulation No. 1, specifically Section III.D which regulates fugitive emissions. As a result of fugitive complaints, a particulate emission control plan has been developed and is included in the operating permit (Construction Permit 84EA192-3).

(NOTE: The 20% opacity, no off-property transport, and nuisance emission limitation are guidelines and not enforceable standards and no person shall be cited for violation thereof pursuant to C.R.S. 1973, 25-7-115 as amended.)

Unit M004 – Railcar Loadout (Construction Permit 84EA192-4F)

Since this unit is not enclosed, NSPS Subpart OOO does not apply. The actual (and potential) uncontrolled emissions for this unit are below 2 tons per year, and therefore the railcar loadout is exempt from both permit and APEN requirements. The railcar loadout was added to the insignificant activity in Appendix A.

Unit M005 – Power Screen (Construction Permit 00EA0038)

Prior to the aggregation of the wallboard plant and the gypsum mine, the power screen located at the mine was not subject to the requirements of NSPS Subpart OOO. The subpart explicitly exempts facilities without crushers or grinding mills.

The single source determination of the wallboard plant and gypsum mine results in the two facilities being treated as one for the purpose of air quality regulations. Unless otherwise specified, when determining the applicability of NSPS and NESHAP requirements, the plant and mine are to be considered one facility. When emission units from the wallboard plant and gypsum mine are combined, the power screen could become subject to the requirements of Subpart OOO since there is an operating crusher at the wallboard manufacturing site.

Subpart OOO is intended to regulate the processing of non-metallic minerals. Screens are subject to these requirements when they are used in conjunction with crushers. The screen used at the mine site is used independently of the other process equipment operating at the wallboard facility. The mine infrequently excavates material that is oversized. On the occasion the oversized gypsum is present, the large rocks are sieved out to be used in the accelerator mill. Less than 10% of excavated material is screened. The purpose of the screen is not to produce material that will be used in the crusher. Therefore, the screen is considered not applicable to Subpart OOO since it does not operate with a crusher.

As mentioned, the screen does not operate on a regular basis and consequently the actual emissions of PM since its installation has been far below the permitting threshold of two tons per year for an attainment area. For this reason, the source has cancelled the permit for this unit and the screen is now considered insignificant activity. The screen has been included in Appendix A as an insignificant activity.

Unit M006 – Diesel engine (Construction Permit 02EA0239)

This engine is subject to the requirements of Colorado Regulation No. 1, specifically Sections II.A (opacity) and VI.B.4 (SO₂) as identified in the underlying construction permit. Engines are specifically exempted from the definition of fuel burning equipment and therefore the requirements of Regulation No. 6 Section II.C (particulate matter and opacity) and Regulation No. 1 Section III.A (particulate matter) do not apply.

This unit is subject to NESHAP Subpart ZZZZ and Subpart A (General Provisions) as described above.

III. Discussion of Modifications Made

Source Requested Modifications

The renewal application received on March 16, 2007 requested no changes to the operating permit with the exception of a reduction in annual throughput limitations for the Waste Reclaim System (P020) from 90,000 tons to 80,000 tons.

The request was approved and the annual throughput limitations were lowered to 80,000 tons per year. Accordingly, the annual emission limitations were also lowered to reflect the reduced throughput. This decrease in potential emissions also removed the emission unit from compliance assurance monitoring (CAM) requirements. The CAM requirements for the Waste Reclaim System were removed from this issuance of the permit.

Other Modifications

In addition to the source requested modifications, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal. These changes are as follows:

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- It should be noted that the monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).

Section I – General Activities and Summary

- Updated Condition 3.1 (status of source with respect to PSD requirements) to reflect Division's current standard language and current Regulation No. 3 citations.
- The description in Condition 1.1, Permitted Activities, was changed to include mining operations. The equipment from mine was added to the summary of emission units in Condition 6.
- An AOS was added for the temporary and permanent replacement of the diesel-fired internal combustion engine. The AOS for turbine replacement was updated to the most current version.

Section II – Specific Permit Terms

- Updated the portable monitoring language for the turbine to the most recent version (6/1/2006)
- NESHAP Subpart ZZZZ requirements were added for the two diesel emergency generators (S018) and the newly added diesel engine from the mine (M006). The only requirements of this subpart applicable to the engines were management practices (oil and filter change, inspect air cleaner and inspect hoses and belts).
- NESHAP Subpart A requirements were added in accordance with the provisions of NESHAP Subpart ZZZZ for both the emergency generators and the mine engine.
- Changed the opacity citations in Condition 4.4 for all the manufacturing processes not subject to Subpart OOO from fuel burning equipment (Reg 1 Section II) to manufacturing processes (Reg 1 Section III).
- Requirements of Subpart OOO added for the Waste Reclaim System, as explained in the applicability section above.

Condition 9 – Gypsum Mineral Mining Operation Fugitive Emissions

- Added point for quarry fugitive emissions. The particulate emissions plan was added as written in Colorado Construction Permit 84EA192-3F.
- Additional monthly opacity monitoring was added. The frequency was determined adequate by the Division based on the nature of the operation, compliance history, and past inspections. The frequency will be adjusted based on the results of opacity monitoring.

Condition 11 – Diesel RICE

- Added requirements from Colorado Construction Permit 02EA0239 for the Cummins diesel engine.
- The diesel fuel usage limits from the underlying construction permit were intended to allow for the engines to be run constantly (8760 hours per year). The limitation of 93,360 gallons per year included in the construction permit is believed to be a typographical error, as the annual fuel usage for these engines being run 8760 hours is 96,360 gallons. The operating permit will include the 96,360 gallons per year figure.

Section III – Permit Shield

- Updated the Reg 3 Citation for the permit shield.
- The state only Reg 6 requirements applicable to the power screen (opacity and particulate matter) were streamlined out of the permit.

- Removed Waste Reclaim System as non-applicable to the NSPS Subpart OOO requirements.

Section IV – General Permit Conditions

- Updated the general permit conditions to the current version (3/23/2010).

Appendices

- Updated Appendices B and C (Monitoring and Permit Deviation Reports and Compliance Certification Reports) to the newest versions (2/20/2007).
- Cleared the list of modifications from Appendix F related to the previous issuance.
- The railcar loadout and power screen were added to Appendix A as insignificant activity.